REMARKS

The Office Action dated May 17, 2005, has been received and carefully noted. The above amendment to the Abstract and the claims, and the following remarks, are submitted as a full and complete response thereto.

The Abstract is amended to better comply with accepted U.S. patent practice. Claims 1 and 6 are amended to correct minor informalities. Claims 1-8 are pending in the present application and are respectfully submitted for consideration.

As a preliminary matter, the Office Action indicates that claims 4 and 5 are allowed. Applicants acknowledge with appreciation the finding of allowable subject matter.

The Abstract was objected to for minor informalities. Applicants submit a replacement Abstract correcting the informalities. Thus, the objection to the Abstract is rendered moot.

Claims 1 and 6 were rejected under 35 U.S.C. § 112, second paragraph, for failing to provide proper antecedent basis for a claim limitation. Applicants amend claims 1 and 6 to provide proper antecedent basis for the claim limitation. Thus, applicants respectfully request that the indefiniteness rejection be withdrawn.

Claims 1-2 and 6-7 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,154,462 (Coden) in view of "Switched, Fast and Gigabit Ethernet," pgs. 187-202 (Breyer et al.). The Office Action took the position that Coden taught the elements of claims 1-2 and 6-7 except one of the address tables being a

layer three IP lookup table. The Office Action then alleged that Breyer taught the elements of claims 1-2 and 6-7 missing from Coden. Applicants respectfully traverse the obviousness rejection and respectfully submit that the cited references of Coden and Breyer, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims.

Claim 1, upon which claim 2 is dependent, recites a method of handling data packets in a series of network switches. The method includes receiving an incoming data packet at a data port of a first switch of the series of network switches. The method also includes resolving a stack tag from a header of the incoming data packet. The method also includes determining whether the incoming data packet is a unicast packet, a multicast packet or an IP multicast packet and to search the address resolution lookup and layer three IP lookup tables to find an egress port for the incoming data packet. The method also includes modifying the header of the incoming packet. The method also includes forwarding the incoming data packet to at least a second switch of the series of network switches, on a stacked connection operating at a first data rate, based on the stack tag and the egress port. The method also includes remodifying the header of the incoming packet when the egress port is one of a series of data ports of a particular switch of the series of switches.

Claim 6, upon which claim 7 is dependent, recites a network switch in a series of network switches. The network switch includes means for receiving an incoming data packet at a data port of a first switch of the series of network switches. The network

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switch also includes means for resolving a stack tag from a header of the incoming data packet. The network switch also includes means for determining whether the incoming data packet is a unicast packet, a multicast packet or an IP multicast packet, and to search the address resolution lookup and layer three IP lookup tables to find an egress port for the incoming data packet. The network switch also includes means for forwarding the incoming data packet to at least a second switch of the series of network switches, on a stacked connection operating at a first data rate, based on the stack tag and the egress port. The network switch also includes means for modifying the header of the incoming packet when the egress port is one of a series of data ports of a particular switch of the series of switches.

As discussed in the specification, examples of the present invention provide layer three switching of data through a network switch that does not impede the processing of the data by that switch. All of the hardware is disposed on a single microchip. Examples of the present invention also enable and control access on a network switch, such that data packets are handled in an environment where multiple network switches are stacked together in configurations that allow data packets to be switched among ports of those network switches. Applicants respectfully submit that the cited references of Coden and Breyer fail to disclose or suggest all the features of any of the presently pending claims. Therefore, the cited references fail to provide the critical and unobvious advantages discussed above.

Coden relates to circuits and methods for a ring network. Coden describes that an Ethernet packet with a broadcast address, multicast address, or an invalid address for a terminal not associated with the ring network will travel indefinitely around the ring network due to the manner in which the Ethernet switches process packets with unknown destination addresses. Referring to Figure 1, system 100 includes a number of ring switches 104-1 through 104-N. Each ring switch includes one or more local ports that are coupled to local networks and uses a method that prevents packets from being transmitted around the ring network indefinitely. Accordingly, a ring switch reads the source address of packets as they enter the ring interface for the ring switch. If the source address of the packet received at the ring interface corresponds to the address of a network device associated with the local ports of the ring switch, Coden removes the packet from the ring and discards it. Coden also may use an identification number for each switch to prevent packets from indefinitely circling the ring network. When a packet enters a ring switch from a local port, an identification number for the ring switch is appended, pre-pended or added to the packet. When packets are received at the ring interface of a ring switch, the ring switch looks at the identification number for the packet. If the identification number indicates the packet originated from this ring switch, then the packet is removed from the system. Still according to a further aspect of Coden, a counter is appended to the packet at its originating ring switch. Each subsequent ring switch in the network that processes the packet increments the counter for the packet. Further, each ring switch that processes the packet checks the value of the counter. If the value of the counter exceeds an

assigned threshold, then the packet is removed. The maximum value for the counter is selected so that the packet is removed from the ring when it has circled the network at least once.

Breyer relates to layer 3 switching. Breyer describes a layer 3 switch as a limited-purpose, wire-speed LAN router that uses hardware instead of software to perform packet-to-packet IP routing. According to Breyer, layer 3 switches operate primarily at Layer 3 of the OSI model, but also perform frame forwarding at Layer 2. Packet routing is done in accordance with established Layer 3 routing standards, for example, through the exchange of routing tables based on industry standard routing protocols. A router according to Breyer obtains its table information through both learning and exchanging routing tables with other routers. Layer 3 switches of Breyer also forward frames at wire speed rates, such as 10, 100 or 1000 Mbps with minimal latencies and only support LAN-based routing. Referring to Figure 5.17, Breyer describes stripping off Layer 2 header to obtain the Layer 3 packet, changing the IP address, and adding back the Layer 2 header using routing table MAC address.

Applicants submit that Coden and Breyer, either alone or in combination, fail to disclose or suggest all the features of claims 1-2 and 6-7. For example, applicants submit that Coden and Breyer fail to disclose or suggest forwarding the incoming data packet to at least a second switch of the series of network switches, on a stacked connection operating at a first data rate, based on the stack tag and the egress port and remodifying

the header of the incoming packet when the egress port is one of a series of data ports of a particular switch of the series of switches.

Referring to Coden, the Office Action acknowledges that Coden "fails to disclose one of the address table (sic) being a layer three IP lookup tables (sic)." Applicants also submit that this reference fails to disclose or suggest the features discussed above. Coden describes a switch determining whether the packet has an address of a network device associated with the local ports of the switch or an identification number pertaining to the switch, or if a counter is at a certain value to discard the packet so it does not continue around a ring network indefinitely. Coden fails to forward the packet based on a stack tag and the egress port.

Applicants also submit that Coden fails to remodify the header when the egress port is one of a series of data ports of a particular switch of a series of switches. The Office Action refers to Coden attaching or incrementing a counter, or attaching an address or identification number relating to the packet as showing this feature of the claims. Applicants submit that Coden fails to disclose or suggest remodifying a packet header when attaching the counter or identification number. Further, Coden fails to attach the counter or identification number when an egress port is one of a series of data ports of a particular switch of a series of switches. Instead, Coden describes attaching the counter or identification number to all incoming packets.

Applicants submit that Breyer, either alone or in combination with Coden, fails to disclose or suggest those features of the claims missing from Coden. Breyer strips off a

layer 2 header to obtain a layer 3 packet, and then adds back the layer 2 header. Applicants submit that this process of Breyer fails to forward the incoming packet on a stacked connection operating at a first data rate based on a stack tag and the egress. Further, Breyer fails to remodify the header of a packet. Instead, Breyer adds back the header that was stripped off earlier. Breyer also fails to disclose or suggest differentiating packets based on whether an egress port is one a series of data ports of a particular switch. Thus, applicants submit that Breyer fails to disclose or suggest remodifying the header of the packet when the egress port is one of a series of data ports of a particular switch.

In contrast, claim 1 recites "forwarding said incoming data packet to at least a second switch of said series of network switches, on a stacked connection operating at a first data rate, based on the stack tag and the egress ports" and "remodifying the header of said incoming packet when the egress port is one of a series of data ports of a particular switch of said series of switches." Claim 6 recites similar features to claim 1, as well as other features, but is drawn to a network switch. Applicants respectfully submit that Coden and Breyer fail to disclose or suggest, for the reasons given above, at least these features of pending claims 1-2 and 6-7.

For at least these reasons, applicants respectfully submit that Coden and Breyer, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims. Thus, applicants respectfully request that the obviousness rejection of claims 1-2 and 6-7.

Claims 3 and 8 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Coden in view of Breyer and further in view of U.S. Patent No. 6,425,015 (Jennings et al.). The Office Action took the position that Coden and Breyer taught all the elements of claims 3 and 8 except resolving a mirroring field of the incoming data packets, and forwarding the incoming data packet to a mirroring port based on the mirroring. The Office Action then alleged that Jennings provided those elements of claims 3 and 8 missing from Coden and Breyer. Applicants respectfully traverse the obviousness rejection and submit that the cited references of Coden, Breyer and Jennings, either alone or in combination, fail to disclose or suggest all the features of any of the presently pending claims.

Claim 3 depends directly from claim 1. Claim 1 is discussed above. Applicants submit that claim 3 includes the features of claim 1 and also the features of resolving a mirroring field of the incoming data packet, and forwarding the incoming data packet to a mirroring port based on the mirroring field.

Claim 8 depends directly from claim 6. Claim 6 is discussed above. Applicants submit that claim 8 includes the features of claim 6, and also includes the features of means for resolving a mirroring field of the incoming data packet, and means for forwarding the incoming data packet to a mirroring port based on the mirroring field.

Coden and Breyer are summarized above. Applicants respectfully submit that these references fail to disclose or suggest all the features of claims 3 and 8 for at least the reasons given above.

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Jennings relates to stacked communication devices and method for port mirroring using modified protocol. Jennings describes port mirroring between ports on separate devices in a stack of communication devices by establishing a protocol for communications within a cascade connection forming the stack. An indication is given in Jennings of whether the communication is being sent to the mirror port in addition to its intended destination. Jenning describes avoiding an increase in the volume of traffic in the cascade connection as would be the case if the original and mirror copy was sent separately.

Applicants submit that the cited references of Coden, Breyer and Jennings fail to disclose or suggest all the features of any of the presently pending claims. Applicant submits that Coden and Breyer fail to disclose or suggest all the features of claims 3 and 8 based on the reasons provided above. Applicants also submit that Jennings, either alone or in combination with Coden and Breyer, fails to disclose or suggest those features of claims 3 and 8 missing from Coden and Breyer. For example, applicants submit that Jennings fails to disclose or suggest "forwarding said incoming data packet to at least a second switch of said series of network switches, on a stacked connection operating at a first data rate, based on the stack tag and the egress ports" and "remodifying the header of said incoming packet when the egress port is one of a series of data ports of a particular switch of said series of switches," as discussed above. Jennings describes establishing a protocol for communications within a cascade connection forming a stack that indicates whether a communication is to be sent to a mirror port as well as its destination port.
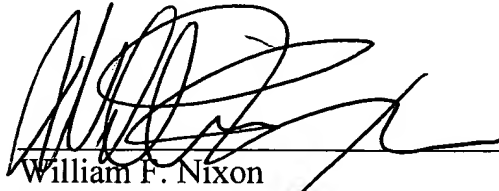
Applicants submit that sending a packet to a mirror port and a destination port fails to disclose or suggest forwarding a packet based on the stack tag and the egress port. Further, applicants submit that Jennings fails to remodify the header of an incoming packet. Thus, applicants submit that Jennings fails to disclose or suggest at least these features of claims 3 and 8.

Applicants respectfully submit that each of claims 1-8 recite subject matter that is neither disclosed or suggested by Coden, Breyer and Jennings, either alone or in combination. Therefore, applicants respectfully request that claims 1-3 and 6-8, like claims 4 and 5, be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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